

We claim:

1. A protective lug cap assembly for protection of a lug of a friction brake disc, wherein said disc has a periphery, and wherein said disc periphery has a plurality

5 of circumferentially spaced slots, separating a plurality of circumferentially spaced lugs, wherein said slots are separated by a distance and disposed for engagement by a spline of a torque device, each of said slots having two generally radially extending wall portions, wherein said wall portions have a top, a bottom, and opposing sides, and a bottom surface extending between and 10 interconnecting said wall portion bottoms comprising:

a lug cap having a lug cap face, wherein said lug cap covers one of said slot wall portions and extends circumferentially away from said slot on said slot wall top and said slot wall opposing sides, covering a portion of the lug, and wherein said lug cap face is a portion of the lug cap which covers said slot wall portion;

15 a load bearing fastening device operative to fasten the lug cap to the lug, such that said lug cap does not contact said slot wall portion.

2. The protective lug cap assembly of claim 1 wherein said lug cap extends circumferentially away from said slot approximately one half of the distance to an adjacent slot.

20 3. The protective lug cap assembly of claim 1 wherein said periphery is an outer periphery.

4. The protective lug cap assembly of claim 1 wherein said periphery is an inner periphery.

25 5. The protective lug cap assembly of claim 1 wherein said lug cap is comprised of a steel alloy material.

6. The protective lug cap assembly of claim 1 wherein said lug cap is comprised of a cobalt alloy material.

7. The protective lug cap assembly of claim 1 wherein said lug cap is comprised of Stellite® 21 material.

8. The protective lug cap assembly of claim 1 wherein there is a gap between said lug cap and said slot wall portion, wherein the gap is approximately 0.04 inches.
9. The protective lug cap assembly of claim 1 wherein said load bearing fastening device comprises rivets, wherein said rivets are installed approximately parallel to a radial plane of the disc.
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10. A method of protecting lugs of a friction brake disc wherein said disc has a periphery, and wherein said disc periphery has a plurality of circumferentially spaced slots, separating a plurality of circumferentially spaced lugs, wherein said slots are separated by a distance and disposed for engagement by a spline of a torque device, each of said slots having two generally radially extending wall portions, wherein said wall portions have a top, a bottom, and opposing sides, and a bottom surface extending between and interconnecting said wall portion bottoms, the method comprising the steps of:
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- 15        covering said slot wall portions and the associated lugs with a lug cap, wherein said lug cap has a lug cap face, wherein said lug cap covers one of said slot wall portions and extends circumferentially away from said slot wall portion on said slot wall top and said slot wall opposing sides, covering a portion of the associated lug, and wherein said lug cap face is a portion of the lug cap which covers said slot wall portion; and,
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- 20        mounting said lug cap to said lug with a load bearing fastening device, such that said lug cap face does not contact said slot wall portion.
11. The method of protecting lugs of a friction brake disc of claim 10 wherein said lug cap extends circumferentially away from said slot approximately one half of the distance to an adjacent slot.
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12. The method of protecting lugs of a friction brake disc of claim 10 wherein said periphery is an outer periphery.
13. The method of protecting lugs of a friction brake disc of claim 10 wherein said periphery is an inner periphery.
- 30        14. The method of protecting lugs of a friction brake disc of claim 10 wherein said lug cap is comprised of a steel alloy material.

15. The method of protecting lugs of a friction brake disc of claim 10 wherein said lug cap is comprised of a cobalt alloy material.
16. The method of protecting lugs of a friction brake disc of claim 10 wherein  
5 said lug cap is comprised of Stellite® 21 material.
17. The method of protecting lugs of a friction brake disc of claim 10 wherein there is a gap between said lug cap and said slot wall portion, wherein the gap is approximately 0.04 inches.
18. The method of protecting lugs of a friction brake disc of claim 10 wherein  
10 said load bearing fastening device comprises rivets, wherein said rivets are installed approximately parallel to a radial plane of the disc.
19. Method of load transfer from a torque device spline to a lug of a friction brake disc to increase the disc's load margin, wherein said disc has a periphery, and wherein said disc periphery has a plurality of circumferentially spaced slots,  
15 separating a plurality of circumferentially spaced lugs, wherein said slots are separated by a distance and disposed for engagement by said torque device spline, each of said slots having two generally radially extending wall portions, wherein said wall portions have a top, a bottom, and opposing sides, and a bottom surface extending between and interconnecting said wall portion bottoms,  
20 the method comprising the steps of:
  - covering said slot wall portions with a lug cap wherein said lug cap has a lug cap face, wherein said lug cap covers one of said slot wall portions and extends circumferentially away from said slot wall portion on said slot wall top and said slot wall opposing sides, covering a portion of the lug, and wherein said lug cap face is a portion of the lug cap which covers said slot wall portion; and,
  - mounting said lug cap to said lug with a load bearing fastening device, such that a force applied to the lug cap will be transferred to the lug via said fastening device, and not via said slot wall portion.
20. The method of claim 19 wherein said lug cap is mounted such that said lug  
30 cap face does not contact said slot wall portion.

21. The method of claim 19 wherein said lug cap extends circumferentially away from said slot approximately one half of the distance to an adjacent slot.
22. The method of claim 19 wherein said periphery is an outer periphery.
23. The method of claim 19 wherein said periphery is an inner periphery.
- 5 24. The method of claim 19 wherein said lug cap is comprised of a steel alloy material.
25. The method of claim 19 wherein said lug cap is comprised of a cobalt alloy material.
26. The method of claim 19 wherein said lug cap is comprised of Stellite® 21
- 10 material.
27. The method of claim 19 wherein there is a gap between said lug cap and said slot wall portion, wherein the gap is approximately 0.04 inches.
28. The method of claim 19 wherein said load bearing fastening device comprises rivets, wherein said rivets are installed approximately parallel to a
- 15 radial plane of the disc.
29. The method of claim 19 wherein said load bearing fastening devices are positioned to share the load transfer equally.